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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,893	07/26/2000	Donald Wayne Allen	TH1258 (US)	8026

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EXAMINER

MITCHELL, KATHERINE W

ART UNIT	PAPER NUMBER
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3677

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/625,893

Applicant(s)

ALLEN ET AL.

Examiner

Katherine W Mitchell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date with this action.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

In response to the Appeal Brief filed 4/19/2004, the rejection is cancelled and prosecution is reopened.

Examiner notes for the record the exceptional cooperation and professionalism of applicant's attorney in prosecuting the application.

Applicant is reminded to submit formal drawings reflecting the approved changes for Figs 8 and 14, submitted 1/25/02 and approved 2/13/02.

### **EXAMINER'S AMENDMENT**

1. An Examiner's Amendment was proposed by examiner and authorization was given in a telephone interview with Eugene Montalvo on 5/18/2004 and 5/19/2004 and 6/30/04. However, further consideration was given during the final search update and the prosecution has been reopened, so the proposed examiner's amendment is not being submitted.

### ***Claim Objections***

2. Claim 1 line 2 should be amended to add --a substantially cylindrical marine element consisting of-- after "providing" to ensure the method and structure are both correctly referred to. As discussed below under "response to Arguments", examiner is considering that applicant intended to have the method also limited to a single step of providing an ultra smooth surface as described.

Claim 1 line 4 "through" should be changed to --trough-- to correct a typing error.

3. Claim 2 line 2 has been amended to add --providing a substantially cylindrical marine element consisting of-- after "consisting of" to ensure the

method and structure are both correctly referred to. As discussed below under "response to Arguments", examiner is considering that applicant intended to have the method also limited to a single step of providing an ultra smooth surface as described.

4. Claim 3 line 2 should be changed to add --providing a substantially cylindrical marine element consisting of-- after "consisting of" to ensure the method and structure are both correctly referred to. As discussed below under "response to Arguments", examiner is considering that applicant intended to have the method also limited to a single step of providing an ultra smooth surface as described.

Claim 4 should be changed to change "have" in line 3 to --having-- to correct a typing error.

Claim 4 line 6, "the sleeve" should be changed to --the ultra-smooth effective coating-- for consistency.

5. Claim 3 was objected to in the office action mailed 2/11/2003 because of a "cut and paste" error in line 2 of the claim. Applicant has corrected the claim in the latest claim submission of 8/26/2003, but the listing of the claims does not indicate that the claim is currently amended. Examiner will examine the claim, but reminds applicant for the future that the new rules require a complete listing of all claims including *current* status because of the scanning and electronic printing system.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicant's Declaration filed 9/3/2002 states in paragraph 13 that the Allen paper teaches that cylinder with a k/D in the range of  $1.21 - 1.51 \times 10^{-4}$  without a strongback had increased VIV and increased drag. The smooth PVC cylinder with k/D  $8.86 \times 10^{-5}$  to  $1.09 \times 10^{-4}$  without a strongback is also described as displaying substantial vibration and significant decreased drag.

If examiner accepts that the Allen paper requires the cylindrical element to be or include a support or strongback to reduce the VIV, then a full consideration of this argument results in an apparent contradiction of the pending claims functionality and enablement. There is no additional limitation in the pending claims to explain why the same structure that is specifically noted as **not** reducing/controlling drag and VIV can be used to successfully reduce/control drag and VIV. Thus either there is an enabling step or feature missing, or the claimed invention cannot work.

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as

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to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.

See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-2 and 4-5 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 6571878. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of U.S. Patent No. 6571878 teaches a substantially cylindrical marine element with a k/D of  $1 \times 10^{-4}$  or less, with no additional structure disclosed. Claim 3 of U.S. Patent No. 6571878 teaches a substantially cylindrical marine element with a k/D of  $1 \times 10^{-4}$  with the smooth surface being a coating. As the only method step disclosed in

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the pending application is providing the structure, the method is inevitably taught by the structure.

10. Claims 3 and 6 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 6571878 in view of Gregory, US Patent 4470722. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of U.S. Patent No. 6571878 teaches a substantially cylindrical marine element with a  $k/D$  of  $1 \times 10^{-4}$  or less, with no additional structure disclosed. Claim 3 of U.S. Patent No. 6571878 teaches a substantially cylindrical marine element with a  $k/D$  of  $1 \times 10^{-4}$  with the smooth surface being a coating. A sleeve is an obvious variant of a coating or cylindrical surface. Examiner notes that Gregory teaches in col 2 lines 15-23 that fairings (sleeves) are commonly known to suppress VIV of a single riser. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified U.S. Patent No. 6571878 to include or provide smooth surfaces of  $1 \times 10^{-4}$  or less, as taught in U.S. Patent No. 6571878, as a sleeve on a substantially cylindrical element, as taught by Gregory, in order to minimize the additional costs and labor required in obtaining an ultra-smooth surface as an existing structure can be converted to an ultra-smooth one without being removed and replaced. The method is inevitably taught by the apparatus as shown installed. As the only method step disclosed in the pending application is providing the structure, the method is inevitably taught by the structure.

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Although a terminal disclaimer was filed June 21, 2003, the person signing the terminal disclaimer is not a recognized signatory for a terminal disclaimer, and thus it is not accepted or entered. Note that no additional fee will be needed for a terminal disclaimer.

11. Claims 1 and 3 and 4 and 6 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6702026. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of U.S. Patent No. 6702026 teaches a substantially cylindrical marine element with a k/D of  $1 \times 10^{-5}$  or less, with the surface comprising a sleeve with no other structure disclosed. As the only method step disclosed in the pending application is providing the structure, the method is inevitably taught by the structure.

12. Claims 2 and 5 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6702026 in view of Gregory, US Patent 4470722. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of U.S. Patent No. 6702026 teaches a substantially cylindrical marine element with a k/D of  $1 \times 10^{-5}$  or less, with the surface comprising a sleeve with no other structure disclosed. Gregory teaches in column 4 lines 59-65 a cylindrical housing element for use with a marine production facility that has an exterior coating of fiberglass or plastic. A sleeve is an obvious variant of a coating or cylindrical surface and vice-versa. Examiner notes that Gregory teaches in col 2 lines 15-23 that fairings (sleeves) are



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commonly known to suppress VIV of a single riser. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified U.S. Patent No. 6702026 to include or provide smooth surfaces of  $1 \times 10^{-4}$  or less, as taught in U.S. Patent No. 6702026, as a coating on a substantially cylindrical element, as taught by Gregory, in order to minimize the additional costs and labor required in obtaining an ultra-smooth surface as an existing structure can be converted to an ultra-smooth one without being removed and replaced. As the only method step disclosed in the pending application is providing the structure, the method is inevitably taught by the structure.

***Claim Rejections – 35 U.S.C. 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as obvious over Allen and Hennings's paper, *Vortex-Induced Vibration Tests of a Flexible Smooth Cylinder at Supercritical Reynolds Numbers*, May 1997, hereafter called the Allen et al. paper.

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Re claims 1 and 4: The Allen et al. paper teaches on page 681, col 1, 2<sup>nd</sup> - 4<sup>th</sup> full paragraphs a method and system for controlling drag and vortex induced vibration, consisting of providing an ultra-smooth surface about the cylinder element of ABS® or PVC plastic with a surface roughness of  $k/D$  between  $8.86 \times 10^{-5}$  to  $1.51 \times 10^{-4}$ . Since the structure disclosed in the Allen paper is the same as that claimed by applicant, and the structure as claimed can include no other elements, the structure must inevitably perform in the same manner. Applicant claims substantially cylindrical element with an exterior surface that has a  $K/D$  value of about  $1 \times 10^{-4}$  or less, which  $8.86 \times 10^{-5}$  clearly meets. The method is inherently taught by the structure.

15. Claims 2-3 and 5-6 are rejected under 35 U.S.C. 103(a) as obvious over the Allen et al. paper in view of Gregory, US Patent 4470722.

Re claims 2 and 5: As discussed above, the Allen et al paper teaches all the elements except that the ultra-smooth surface can be a coating. Gregory teaches in column 4 lines 59-65 a cylindrical housing element for use with a marine production facility that has an exterior coating of fiberglass or plastic. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Allen et al. paper to include or provide smooth surfaces of  $1 \times 10^{-4}$  or less, including  $8.86 \times 10^{-5}$  or less as taught in the Allen et al. paper, as a coating on a substantially cylindrical element, as taught by Gregory, in order to minimize the additional costs and labor required in obtaining an ultra-smooth surface, as an existing structure can be converted to

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an ultra-smooth one without being removed and replaced. The method is inevitably taught by the apparatus as shown installed.

Re claims 3 and 6: As discussed above, the Allen et al paper teaches all the elements except that the ultra-smooth surface can be a sleeve. A sleeve is an obvious variant of a coating or cylindrical surface. Examiner notes that Gregory teaches in col 2 lines 15-23 that fairings (sleeves) are commonly known to suppress VIV of a single riser. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Allen et al. paper to include or provide smooth surfaces of  $1 \times 10^{-4}$  or less, including  $8.86 \times 10^{-5}$  or less as taught in the Allen et al. paper, as a sleeve on a substantially cylindrical element, as taught by Gregory, in order to minimize the additional costs and labor required in obtaining an ultra-smooth surface as an existing structure can be converted to an ultra-smooth one without being removed and replaced. The method is inevitably taught by the apparatus as shown installed.

### ***Response to Arguments***

16. Applicant's arguments filed 19 Aug 2003 have been fully considered but they are not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the cylindrical element is not a strongback or does not include an inserted strongback or support) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

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limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Examiner notes that applicant has used the narrower phrase “consisting of” rather than “comprising—”. A claim with a structure or method “consisting of” cannot include additional structure or steps. (in re Gray 53 F.2d 520, 11 USPQ (CCPA 1931); Ex parte Davis, 80 USPQ 448, 450 (Bd App. 1948) However, as written, claims 1-3 are limited in the steps, but not the structure. If claims 1-3 are amended as suggested under “Claim Objections”, then examiner agrees that the claimed invention cannot include a support or strongback.

17. Examiner accepts that the Allen paper requires the cylindrical element to be or include a support or strongback to reduce the VIV. However, a full consideration of this argument results in an apparent contradiction of the pending claims functionality. Applicant's Declaration filed 9/3/2002 states in paragraph 13 that the Allen paper teaches that cylinder with a k/D in the range of  $1.21 \times 10^{-4}$  to  $1.51 \times 10^{-4}$  without a strongback had increased VIV and increased drag. The smooth PVC cylinder with k/D  $8.86 \times 10^{-5}$  to  $1.09 \times 10^{-4}$  without a strongback is also described as displaying substantial vibration and significant decreased drag.

There is no additional limitation in the pending claims to explain why the same structure that is specifically noted as **not** reducing/controlling drag and VIV can be used to successfully reduce/control drag and VIV. Thus either there is an enabling step or feature missing, or the claimed invention cannot work.

Examiner cannot know which situation explains this contradiction, so a lack of enablement rejection is being provided, if the claimed invention does work but a

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step or feature is missing, and is also repeating the rejection that the Allen paper teaches or makes obvious the claims, as the same structure is taught and thus the same results are expected.

***Conclusion***

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine W Mitchell whose telephone number is 703-305-6713. The examiner can normally be reached on Tues-Fri 9 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on 703-306-4115. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-308-8623 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

A handwritten signature in black ink, appearing to read "Katherine W Mitchell", is written in a cursive style.

kwm  
August 19, 2004